9. Kitchen Ecology Units + Transfer Fans

KEF-T14-08 and TXF-T11-01 - Serves Club Lounge Hood Level T11

A) System Description

The system consists of transfer fan supplying fresh air to kitchen hood and kitchen extract fan extracting the exhaust air from the hood. OA-AHU-T14-01 supplies treated air to level T11 corridor and other areas. TXF-T1-01 transfers a percentage of the kitchen hood.

Kitchen Ecology Units consist of extract fan with VFD & extract air damper.

Transfer Fans consist of supply fan.

B) Transfer Fan & KEF Control and Monitoring

Operator shall be provided with a time schedule to select hood working and non-working times. Transfer & Kitchen extract fans shall be commanded to run based on the time channels of time scheduler and if the H/O/A switch of kitchen extract fan is in the 'Auto' position.

Transfer fan and KEF shall be interlocked with each such that if one fails (or switches OFF) the other shall also switch OFF. This system shall also be interlocked with the run status of OA-AHU-T14-01.

The start-up sequence for KEF and transfer fan shall be as follows.

Initially when time scheduler activates, transfer fan shall be commanded to start. Once transfer fan run status is confirmed to BMS via differential pressure switch **(QBM81-3)**, BMS shall send open command to KEF damper. Once KEF damper open status is received from actuator auxiliary switch, Kitchen Extract Fan is commanded to start. The KEF run status is determined via differential pressure switch **(QBM81-3)**.

VFD of Kitchen Extract Fan shall be commanded to run at a fixed speed as per site conditions.

In the event of BMS giving a start command to KEF and transfer fan, and run status of the same is not established vide differential pressure switch after an interrogation time of 30 seconds (adjustable), BMS shall raise a KEF/transfer fan air flow fail Alarm. BMS shall disable all commands to the KEF and transfer fan.

In the event of BMS giving a start command extract fan, and run status of the same is not established vide differential pressure switch after an interrogation time of 30 seconds (adjustable), BMS shall raise a extract fan air flow fail Alarm. BMS shall disable all commands to the extract fan. The extract fan shall not run until alarm for the same has been acknowledged and reset from the BMS workstation.

The shutdown sequence shall be as follows.

The KEF/transfer fan shall not run until alarm for the same has been acknowledged and reset from the BMS workstation.

The shutdown sequence of transfer fan and KEF shall be as follows.

The KEF and the transfer fans shall be commanded to switch off. Subsequently, KEF dampers shall be commanded to close.

C) Fire Alarm

In the event of fire, BMS shall simulate the following action:

(i) Disengage all controls (Switch OFF KEF & transfer fan, close the KEF damper)
BMS shall only simulate the above, however MCC (Motor Control centre) will take necessary corrective action through hard wired contacts from the fire alarm panel

D) Alarms

The followings alarms shall be raised on BMS

S.NO.	ALARM	PRIORITY
1	KEF air flow fail alarm	High
2	KEF trip alarm	High
3	Pre-Filter Dirty Alarm	Low
4	Bag Filter Dirty Alarm	Low
5	Box Filter Dirty Alarm	Low
6	Filter Missing Alarm	Low
7	Transfer fan air flow fail alarm	High
8	KEF damper failed to open alarm	High
9	Fan maintenance alarm	Low

Note:- Maintenance alarms shall be raised based on run hours.